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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,547	09/23/2003	Moray Denhan Rumney	871-011442-US/30021028 US	2921
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PERMAN & GREEN 425 POST ROAD FAIRFIELD, CT 06824			HUANG, DAVID S	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/668,547

Applicant(s)

RUMNEY, MORAY DENHAN

Examiner

David Huang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 7-13 is/are rejected.
- 7) ☒ Claim(s) 2-6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 9/23/2007.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The references listed in the Information Disclosure Statement filed on 23 September 2003 have been considered by the examiner (see attached PTO-1449 form or PTO/SB/08A and 08B forms).

Drawings

3. The drawings are objected to because there are no labels for blocks 214, 220, 224 in Figure 2. These blocks need to have descriptive labels under 37 CFR 1.84(n) and 1.84(o). For example, the boxes 224 should be labeled with "processing chains."

Specification

4. The disclosure is objected to because of the following informalities: The specification lacks the proper section headings. Appropriate correction is required.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.

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- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 7 and 8 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims are directed to "computer program code means" which is non-statutory.

Regarding **claim 7**, the claimed computer program is non-statutory subject matter since it is not a process, machine, manufacture nor composition of matter; nor it is recorded on computer-readable medium, see MPEP 2106(IV)(B)(1). The claim also lacks the proper preamble language for statutory computer program product. See MPEP 2100 for guidance on computer related inventions. The Examiner suggests a preamble as follows:

"A computer readable medium encoded with computer executable instructions to perform a method, the method comprising:"

Claim 8 is rejected for being dependent on claim 7. Furthermore, applicant's disclosure indicates the computer program product can be embodied in a computer data signal (page 18, [0055]). Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1, and 9-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Braithwaite (cited in IDS) in view of Gentzler (US Patent 6,191,652).

Regarding **claim 1**, Braithwaite disclose a method of predicting a signalling code from an n^{th} order set of orthogonal signalling codes (Walsh codes, page 2161, column 1) of length 2^n for a communications system, the signalling code corresponding to a code spur, comprising the steps of:

selecting at least three signalling codes from the n^{th} order set of orthogonal signalling codes within a code space (page 2621, column 1; selected at least three codes is implicit since Braithwaite suggests the Walsh code intermodulation can be extended to higher order products); and

performing an operation on the at least three signalling codes, the operation corresponding to a vector product of the at least three signalling codes, when the at least three signalling codes are expressed in a bipolar form (binary form), to predict the signalling code corresponding to the code spur (page 2621, column 1; higher order products using exclusive-or of the corresponding set of Walsh codes).

However, Braithwaite fails to expressly disclose selecting an odd number of at least three signalling codes.

However, it is well known in the art that odd order intermodulation products are the most troublesome since they fall close to the signals intended to be amplified as is evidenced by Gentzler (column 2, lines 60-64).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to specify choosing an odd number of signalling codes in the method taught by Braithwaite since an odd number of codes would calculate an odd ordered intermodulation which is well known in the art to be the most troublesome and would be advantageous to avoid.

Regarding **claim 9**, Braithwaite discloses everything claimed as applied to claim 1 above, and further discloses a signalling code domain comprising a combination of active signalling codes generated using the method as claimed in claim 1 (page 2621, column 1; the product of two Walsh codes, produces a new Walsh code).

Regarding **claim 10**, Braithwaite discloses a transmitter apparatus for a spread-spectrum communications system, the apparatus comprising: a transmitter chain (CDMA transmit chain, Figure 1).

However Braithwaite fails to expressly disclose a processor coupled to the transmitter chain, the processor being arranged to select an odd number of at least three signalling codes from the n^{th} order set of orthogonal signalling codes within a code space, and perform an operation on the at least three signalling codes, the operation corresponding to a vector product of the at least three signalling codes, when the at least three signalling codes are expressed in a bipolar form, to predict the signalling code corresponding to the code spur.

Processors are well known in the art to be programmable to perform desired processes or instructions. It is well within the ability of a person of ordinary skill in the art to implement the method taught by Braithwaite and Gentzler (see rejection for claim 1), in a well known programmable processor. Thus, it would have been obvious to one having ordinary skill in the art to implement a processor coupled to the transmitter chain as claimed to perform the method taught by Braithwaite and Gentzler for the predictable result of predicting the signalling code corresponding to the code spur.

Regarding **claim 11**, Braithwaite discloses everything claimed as applied to claim 10 above, but fails to expressly disclose a base station comprising the transmitter apparatus of claim 10. Nevertheless, Braithwaite discloses in transmit portions of base stations with nonlinear components such as power amplifiers, distortion becomes an additional source of interference. Therefore, it would have been obvious to one of ordinary skill in the art to provide a base station with the transmitter taught by Braithwaite and Gentzler in order to provide more information about distortion resulting from Walsh code intermodulation products.

Regarding **claim 12**, Braithwaite discloses everything claimed as applied to claim 10 above, and further discloses a spread-spectrum transmitter apparatus as claimed in claim 10 (CDMA transmit chain, Figure 1)

Braithwaite fails to expressly disclose a spread-spectrum communications system. However, spread-spectrum communications systems (CDMA) are well known in the art to comprise transmitters. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the transmitter taught by Braithwaite in a CDMA system since it would provide the added functionality of providing more information about distortion resulting from Walsh code intermodulation products.

Regarding **claim 13**, Braithwaite discloses a use of a vector product of signaling codes expressed in a bipolar form (binary) to predict a signaling code corresponding to a code spur (page 2161, column 1).

8. **Claims 7-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Braithwaite (cited in IDS) in view of Gentzler (US Patent 6,191,652) as applied to claim 1 above, and further in view of Langberg et al. (US 5,852,630).

Regarding **claims 7-8**, the combination of Braithwaite and Gentzler discloses all of the subject matter as described above except for a computer program element embodied on a computer readable medium comprising computer program code means to make a computer execute the method as claimed in claim 1.

However, Langberg et al. teaches that the method and apparatus for a transceiver warm start activation procedure with precoding can be implemented in software stored in a computer-readable medium. The computer-readable medium is an electronic, magnetic, optical, or other

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physical device or means that can contain or store a computer program for use by or in connection with a computer-related system or method (column 3, lines 51-65). One skilled in the art would have clearly recognized that the method of Braithwaite and Gentzler would have been implemented in software. The implemented software would perform the same function of the hardware for less expense, adaptability, and flexibility. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the software as taught by Langberg et al. in the combination of Braithwaite and Gentzler in order to reduce costs and improve the adaptability and flexibility of the communications system.

Allowable Subject Matter

9. **Claims 2-6** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Citation of Pertinent Prior Art

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Silberger et al. (US 6,028,884) discloses a method and apparatus for measuring nonlinear effects in a communications system.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Huang whose telephone number is (571) 270-1798. The examiner can normally be reached on Monday - Friday, 8:00 a.m. - 5:00 p.m., EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on (571) 272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DSH/dsh
August 17, 2007



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SUPERVISORY PATENT EXAMINER